

APPARATUS AND METHOD FOR DEPOSITING LARGE AREA COATINGS ON NON PLANAR SURFACES

ABSTRACT OF INVENTION

A method and apparatus for depositing a uniform coating on a large area, non-planar surface using an array of multiple plasma sources. The apparatus comprises at least one array of a plurality of plasma sources for generating a plurality of plasmas, wherein each of the plurality of plasma sources has a cathode, anode, and an inlet for a non-reactive plasma source gas disposed in a plasma chamber, and at least one reactant gas injector for differentially injecting at least one reactant gas into the plurality of plasmas. The reactant gas injector and substrate are located in a deposition chamber in fluid communication with each plasma chamber. Individual adjustment of the flow of deposition precursor into each of the plasmas generated by the multiple plasma array compensates for changes in substrate processing conditions due to local variations in the working distance between the plasma source and the surface of the substrate.